

Claims

1. A remotely controllable aircraft, in particular a
5 remotely controllable ultralight model helicopter,
comprising at least one rotor blade (104), the angle of
incidence (a) of which is adjustable, **characterized in**
that adjustment of the angle of incidence (a) of said
at least one rotor blade (104) is performed by means of
10 at least one lever acting on the rotor blade by a force
produced through a magnetic field which can be varied
through the electric drive of at least one coil (106).
2. The remotely controlled aircraft as claimed in
15 claim 1, **characterized in that** the magnetic field is
produced by at least one permanent magnet (105) and by
the at least one coil (106).
3. The remotely controlled aircraft as claimed in
20 claim 1, **characterized in that** the at least one coil
(106) is driven in a pulsed manner.
4. The remotely controlled aircraft as claimed in
claim one, **characterized in that** the force which causes
25 the adjustment of the angle of incidence (α) of the at
least one rotor blade (104) is transmitted as a torsion
force to the rotor blade (104) via a connecting bracket
(101) which is hinged on the at least one rotor blade
(104) such that the position of the connecting bracket
30 (101) defines the angle of incidence (α) of the at
least one rotor blade (104).
5. The remotely controlled aircraft as claimed in
claim four, **characterized in that** the connecting
35 bracket (101) can be pivoted about an axis at right
angles to the rotor rotation shaft (108).
6. The remotely controlled aircraft as claimed claim

one, **characterized in that** the at least one coil (106) is arranged on a rotor plate (103) which is connected to a rotor shaft (108).

5 7. The remotely controlled aircraft as claimed in claim one, **characterized in that** the at least one coil (106) is electrically driven via sliding contacts.

10 8. The remotely controlled aircraft as claimed in claim one, **characterized in that** at least one permanent magnet (105), which makes a contribution to the magnetic field, is arranged on at least one connecting lever (101).

15 9. The remotely controlled aircraft as claimed in claim one, **characterized in that** the force which results in the adjustment in the angle of incidence (α) of the at least one rotor blade (104) is transmitted via at least one push rod (111).

20 10. The remotely controlled aircraft as claimed in claim nine, **characterized in that** the at least one push rod (111) is hinged on the connecting lever (101).

25 11. The remotely controlled aircraft as claimed in claim nine, **characterized in that** at least one permanent magnet (105), which makes a contribution to the magnetic field, is arranged on the at least one push rod (111).

30 12. The remotely controlled aircraft as claimed in claimtwo, **characterized in that** the at least one coil (106) is arranged on a non-rotating element of the aircraft, adjacent to the at least one permanent magnet
35 (105).

13. The remotely controlled aircraft as claimed in claim one, **characterized in that** the remotely

controlled aircraft has at least two rotor blades (104) whose angles of incidence (α) can be adjusted independently of one another, and in that each of the at least two rotor blades (104) has at least one associated coil (106).

14. The remotely controlled aircraft as claimed in claim thirteen, **characterized in that** two connecting levers (101) which are connected to the rotor blades (104) and whose angles of incidence (α) can be adjusted independently of one another are connected to one another via a flexible elastic element (113).

15. The remotely controlled aircraft as claimed in claim one, **characterized in that** a lift component (collective blade pitch) which is coaxial with respect to a main rotor shaft (108) is controlled by driving in each case at least two coils (106), each of which is associated with one rotor blade (104), such that the angles of incidence (α) of the at least two rotor blades (104) are varied in the same sense.

16. The remotely controlled aircraft as claimed in claim one, **characterized in that** a lift component (aircraft pitch and/or roll) which is not coaxial with respect to a main rotor shaft (108) is controlled by driving in each case at least two coils (106), each of which is associated with one rotor blade (104), such that the angles of incidence (α) of the at least two rotor blades (104) are varied in opposite senses.

17. The remotely controlled aircraft as claimed in claim one, **characterized in that** the remotely controlled aircraft has at least two rotor blades (106) whose angles of incidence (α) can be adjusted in a coupled manner.

18. The remotely controlled aircraft as claimed in

claim one, **characterized in that** a lift component (collective blade pitch) which is coaxial with respect to a main rotor shaft (108) is controlled by applying a DC voltage, in particular a pulsed DC voltage, to the
5 at least one coil (106), which is associated with at least one rotor blade (104).

19. The remotely controlled aircraft as claimed in claim one, **characterized in that** a lift component
10 (aircraft pitch and/or roll) which is not coaxial with respect to a main rotor shaft (108) is controlled by applying an AC voltage, in particular a pulsed AC voltage, to the at least one coil (106), which is associated with at least one rotor blade (104).

15 20. The remotely controlled aircraft as claimed in claim nineteen, **characterized in that** the period of the AC voltage which is applied to the at least one coil (106) is synchronized to the speed of rotations of the
20 at least one rotor blade (104).

21. The remotely controlled aircraft as claimed in claim one, **characterized in that** a lift component (collective blade pitch) which is coaxial with respect
25 to a main rotor shaft (108) and a lift component aircraft (pitch and/or roll) which is not coaxial with respect to a main rotor shaft (108) are controlled in a superimposed manner.

30 22. The remotely controlled aircraft as claimed in claim one, **characterized in that** the at least one coil (106) is driven completely digitally.

23. The remotely controlled aircraft as claimed in
35 claim one, **characterized in that** a pulse width correction is carried out when the at least one coil with a simultaneous collective blade pitch drive and aircraft pitch/roll drive.

24. A kit for producing a remotely controlled aircraft, in particular an ultralight model helicopter, as claimed in claim one.